

Moses, and he took the name of Drach from his aunt's husband, Mr. Liepman Woolf Drach, who (after his aunt's death) left him his fortune. He married, on August 4, 1841, his cousin Rebecca, the daughter of another aunt who had also been adopted by Mr. L. W. Drach. His uncle died on April 18, 1840, and he continued his business of a commission agent till the death of his aunt, which occurred on June 9, 1847, when he devoted himself to study, being chiefly interested in mathematics, astronomy, and biblical and antiquarian subjects.

Mr. Drach's first published paper appeared in the *Philosophical Magazine* for 1839, and was entitled "On the use of Barometrical Formulæ for determining the Heights of Mountains." He published also, in the *Philosophical Magazine* for 1849, several papers on mathematical questions relating to the description of epicyclical curves. These also had reference to, and contained some account of, the epicycloidal curves which Mr. Perigal had traced geometrically in 1835, and by continuous circular motions in 1840. Mr. Drach published numerous short papers in the *Monthly Notices* of the Society. He was also a frequent contributor to the library of the Society, having presented at different times many volumes, chiefly old astronomical and mathematical works; and after the removal of the Society to Burlington House he passed much of his time in the library, working at his favourite subjects. Some years ago he presented to the Royal Society two large volumes containing resolutions of numbers into sums of squares and cubes; and he devoted much of his time to work of a similar kind. He died, at 23 Upper Barnsbury Street, Islington, on February 8, 1879. He was elected a Fellow of the Society on May 14, 1841.

Mr. Drach was a member of the old Mathematical Society, and became a life Fellow of this Society when the former was merged into it in 1845.

RICHARD FARLEY was for a long period connected with the *Nautical Almanac* Office, first as an ordinary computer and afterwards as First Assistant. He was one of a number of young computers collected together in 1831 by Lieutenant Stratford, Superintendent of the *Nautical Almanac*, for the calculation of the first volume of the enlarged series of that work, according to the recommendations drawn up by a Committee of the Royal Astronomical Society in November of the preceding year. Though little more than twenty years of age, Mr. Farley had at this time already attained a good reputation as an accurate computer, and he was at once intrusted by Lieutenant Stratford with the calculations of the places of the Sun and the lunar distances for the *Almanac* for 1834, as well as with the general examination of most of the computations. After the resignation in 1837 of Mr. Woolhouse, First Assistant, Mr. Farley was chosen to succeed him in that important and responsible office, which he filled more

than thirty years with the greatest devotion to the work, under the superintendence of Lieutenant Stratford and Mr. Hind, even beyond the ordinary business hours of the office, till his superannuation about ten years ago. He was succeeded by Mr. W. Godward, the present Chief Assistant.

Mr. Farley's skill in calculation was well known to a large number of astronomers, who have often availed themselves of his services to assist in carrying out the reduction of large masses of observations, especially in the formation of general catalogues of stars. His first employment on these miscellaneous calculations, few of which are known to the astronomical world, was his engagement by Mr. Baily to assist in completing what at that time was considered a very important publication, the *Astronomical Society's Catalogue of 2,881 Stars*. When Mr. Baily undertook to superintend the compilation of a larger general catalogue of stars, which afterwards assumed the form of the *British Association Catalogue*, he again secured the assistance of Mr. Farley, in whose hands the superintendence of the reductions was placed. In this very laborious work he was assisted by Mr. Russell and Mr. Alger, two of his colleagues in the *Nautical Almanac* Office, but on him rested the entire responsibility for the accuracy of the computations. The magnitude of the reductions was sufficient to absorb the whole of Mr. Farley's unofficial time; and the work was performed to the satisfaction of Mr. Baily, who has acknowledged that it is to the labour, care, and attention of Mr. Farley in particular that the public are indebted for this well-known and popular Catalogue.

The convenient tables of logarithms, in imitation of the tables of Lalande, issued in 1839 under the superintendence of the Society for the Diffusion of Useful Knowledge, but more commonly associated with the name of Professor De Morgan, was carried through the press by Mr. Farley, who, in his most careful manner, examined the proof-sheets with Lalande's work, and afterwards with Vega's edition of Vlacq. Before the tables were stereotyped the differences were all retaken and the work examined throughout by Mr. Farley. It is therefore to him that astronomers and others have been principally indebted for the use of this conveniently arranged pocket volume of tables of logarithms. The reprint of Barlow's useful tables of squares, cubes, square roots, cube roots, and reciprocals, issued in 1840 by the above Society, was also carried through the press by Mr. Farley, by whom all the proofs were carefully read, and the numbers examined by second and third differences. Other works of a similar kind have also had the advantage of his assistance.

Though Mr. Farley's astronomical labours have been chiefly devoted to the assistance of others, he has made original investigations on the orbits of *Pallas* and *Vesta*, taking into account the perturbations by the principal planets. The annual ephemerides for these two minor planets, given in the *Nautical Almanac*, have been calculated from his elements. Mr. Farley was elected a

Fellow of the Society on March 8, 1850, and served four years on the Council, 1860-1864.

ISAAC FLETCHER, F.R.S., of Tarnbank, Cumberland, was born on February 22, 1827. He was the second son of John Wilson Fletcher, of Tarnbank. His mother, Mary, was a daughter of John Allason, of Beech Hill. He married, on December 13, 1861, Esther, daughter of the late Mr. Joseph King, of Wassall Grove, Stourbridge. He unsuccessfully contested Cockermouth in April 1868, but was elected at the general election in the following November, and retained the seat till his death. His politics were liberal. He was a Justice of the Peace for Cumberland. He died by his own hand, in London, on April 3, 1879.

Mr. Fletcher was elected a Fellow of this Society on May 11, 1849. He at first used a telescope of 4.16 inches aperture, for which he built a small observatory, described in vol. x., p. 137, of the *Monthly Notices*; subsequently he obtained a telescope of $9\frac{1}{2}$ inches aperture, the mounting of which is described in vol. xxv., p. 242. He chiefly devoted himself to micrometrical measurements of double stars, and several communications of his on this subject have appeared in the *Monthly Notices*. He was elected a Fellow of the Royal Society on June 7, 1855.

SANDFORD GORTON early evinced a taste for mechanical and scientific pursuits, and astronomy soon became the principal occupation of his leisure. Soon after his marriage he went to reside at Stamford Villa, Downs Road, Clapton, where he established an Observatory. His principal telescope, which was of $3\frac{3}{8}$ -in. aperture, by Ross, was first mounted on an equatoreal stand by Cooke, and afterwards upon a stand with clock motion by Dallmeyer. To his instruments and Observatory Mr. Gorton was constantly adding ingenious contrivances. He became an ardent and persevering general observer, keeping an accurate record of his work. He was an excellent draughtsman, and his delineations of sun-spots and planetary features are marked by careful execution and strict fidelity. In 1861 he presented a series of 111 Indian-ink drawings of *Jupiter*, made between 1839 and 1861, to the Society (*Monthly Notices*, vol. xxii., p. 60). It was during his residence in the Downs Road that Mr. Gorton determined to establish a purely astronomical periodical. In the address which accompanied the first number of the *Astronomical Register*, he states that it occurred to him that it would be very desirable "to collect together those stray fragments of information which, though not of sufficient importance possibly to occupy the pages of the *Monthly Notices*, may nevertheless, in the shape of passing conversations, or occasional notes, be useful for future reference,"